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(54) **ENGINEERED TGF-BETA MONOMERS AND THEIR USE FOR INHIBITING TGF-BETA SIGNALING**

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(57) **ABSTRACT**

Recombinant transforming growth factor (TGF)-β monomers modified to inhibit dimerization and block TGF-β signaling are described. The recombinant TGF-β monomers lack the ability to bind and recruit TGF-β type I receptor (TβRI), but retain the capacity to bind the high affinity TGF-β type II receptor (TβRII), and in some instances, include mutations that increase their affinity for TβRII. Nucleic acid molecules and vectors encoding the recombinant TGF-β monomers are also described. Isolated cells, such as T cells, can be re-programmed with a TGF-β monomer-encoding nucleic acid or vector to secrete the monomer. Use of the recombinant TGF-β monomers and/or cells producing the recombinant TGF-β monomers, to inhibit TGF-β signaling, such as to treat disorders associated with aberrant TGF-β signaling, are also described.

Specification includes a Sequence Listing.